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Dear PUC,

The impact of the February 2021 events with regard to the Texas electrical grid (ERCOT) should be taken in with open minds and without pre-conceptions.

My comments to the PUC are not made with a point of blame, per se, but with a point of cause and learning. How did this happen and how can the State of Texas, the PUC, Ercot, the power suppliers, and all the rest of us, as stakeholders ensure this event is never repeated?

As a customer, Texan, and retired PE (Electrical 61827) I would also like to state to you that I know all commissioners are new since last Feb.

Secondly, I would also like to state that as far as I am concerned the PUC owns the reliability of the Texas grid. As Harry Truman said, "the buck stops here". The reliability of the Texas grid is yours, not Ercot's, or weather, or power suppliers, or politicians, it is yours, full stop.

Now the deficiencies in the "R" part of Ercot are being looked into, but I have no confidence that Ercot is drilling to the depths needed to get the real "R". In fact, they recently announced, quite proudly, that they have signed letters from Power Producer CEOs stating that their systems will be winterized. Wow, and what if they turn out to be wrong? This kind of pablum is easy and cheap to produce. Are any of the CEOs going to be rounded up by the Texas Rangers and hauled to jail if they are wrong? Please, this is exactly the kind of BS that got us where we were in 2021 to begin with.

Fundamentally power generation is a conversion of one form of energy (gas, coal, nuclear, wind, hydro, or solar) into electrical energy available for sale. We all know this. However, if the focus remains on only the part of the overall system downstream of the generator terminals, then many reliability "blind spots" remain. Electrical reliability is really the multiplication of fuel availability reliability times physical process reliability, times mechanical reliability, times electrical reliability (which is usually Ercot's only focus area). These independent power producers control the physical process and mechanical reliabilities, while gas companies (and God) control the fuel reliability.

The PUC must look holistically at the entire process from raw fuel to electrical energy in order to ensure the reliability of the Texas grid.

My view is that Ercot does not look back beyond the generator terminals enough. They listen to the power producers stories and sit there hoping enough power providers show up when

really needed. Hope is not a strategy and hope will not ensure reliable delivery of electricity to the Texas grid. Hope works a lot, but then it doesn't sometimes.

How to move on past hope, you may ask?
#1 Make sure unreliable power suppliers are punished. The longer the unscheduled outage the more severe the punishment. The why for the outage is not important. Put the hammer down! When these suppliers put those inputs into their economics they will come up with different reliability answers. (e.g. maybe we need to have an installed spare transformer with switching read to go).

#2 NEVER, but NEVER allow an unreliable supplier to profit from its unreliability. For example, if a power producer has 4 plants and Ercot is near a critical balance of supply and demand and one of those four plants trips off, leading to emergency purchases, ensure that the supplier who tripped off is punished and not rewarded, for example by providing more power at increased pricing from his other three plants. My recommendation for this scenario would be for the plant that tripped off to pay 100% of the increased cost to the overall electrical grid. After a few such events, the power producer's availability would no doubt increase.

#3. For those producers who are consistently available, find a way to reward them. Make reliability pay. Take the funds from unscheduled outages of the unreliable producers and give them to the reliable producers. You may find that there is a sudden increase in supplier reliability.

#4 Hire a multi-disciplined team of process, mechanical, electrical, and instrumentation experts to conduct random, unannounced inspections of electrical power producer's facilities, with focus on maintenance, operations, spare parts, and personnel competency. Each facility should be graded according to a standard with regard to how well the facility is operated and whether the facility has vulnerabilities that need to be addressed. Communicate observed deficiencies to the Supplier and hand out action plans with target dates to substandard facilities. Penalties to follow if improvements are not made.

#5 Require unscheduled outage reports to Ercot for all producers. Preliminary within 24 hrs and final within 7 days. Each producer must provide detailed information as to the root cause of each unscheduled outage and provide contact information for Ercot to follow up should they determine the need. This requirement includes all facilities back to the fuel supply entry into the facility.

#6 Require the incoming fuel pressure (for natural gas facilities) to be recorded and reported at the time of each unscheduled outage. Why, "I lost fuel" may be a wolf cry. Same for wind velocity at wind sites and solar radiation level at solar sites.

#7 I would also encourage the PUC to hire external, non Ercot, non Power supplier experts to conduct a bi-annual report on the present state of Ercot and their power suppliers with regard to their capability to execute their mission, which is near 100% availability of power for 25 million Texans.

In conclusion, electrical reliability is not an accident and it is also not a product of wishful thinking. Standards, incentives, inspection, and more than anything else, accountability for unreliable operations are necessary. At this point in time, we may not get a repeat of 2021, I am sure there are many hoping for better weather this winter, but hope is really not a strategy.

Best regards,

Charles Neeley, PE (Electrical) 61827 (Ret'd)
Midland, Texas